

Application No. 09/990,087
Amendment dated April 24, 2003
Response to Office Action dated March 24, 2003

REMARKS

The amendment to claim 29 corrects an obvious typographical error. Entry of new claim 36 is respectfully requested. This claim is drawn to the recombinant production of a membrane scaffold protein using a DNA molecule as set forth in claim 34. It is supported by Example 3. The entry of the present Amendment does not constitute the addition of new matter.

The Requirement for Restriction

The Patent Office has required restriction under 35 U.S.C. 121, alleging that the claims as filed embody four separately patentable inventions, as set forth below.

- I. Claims 1-19, drawn to a membrane scaffold protein and a nanoscale particle comprising the membrane scaffold protein, classified in Class 530, subclass 350.
- II. Claims 20-28, drawn to a method for incorporating at least one hydrophobic or partially hydrophobic protein into a nanoscale particle, classified in Class 435, subclass 7.1.
- III. Claims 29-33, drawn to a method for identifying a competitor of binding of a ligand to a receptor protein wherein said receptor protein is incorporated within a nanoscale particle, classified in Class 435, subclasses 7.1.
- IV. Claims 34-35, drawn to a DNA molecule and host cells, classified in Class 536, subclass 23.5, 435, subclass 325.

Applicants provisionally elect with traverse the claims of Group I for examination. Applicants respectfully request the rejoinder of the claims of Group IV, claims 34-35, drawn to a DNA molecule and host cells. In response to the requirement for the election of a particular species for examination,

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Applicants elect the species of membrane scaffold protein which is identified by SEQ ID NO:17 (MSP2, with histidine tag).

In traverse of the requirement for restriction between the claims of Group I and IV, Applicants urge that neither the membrane scaffold protein nor the DNA molecules encoding it are found in nature. There is no other purpose for the claimed DNA molecules other than for expression of the membrane scaffold proteins. A search of the protein, at least in the scientific literature, should be expected to uncover any references to the encoding DNA molecules.

With respect to the requirement to elect a particular species of membrane protein, tethered, embedded or integral, Applicants elect the integral membrane protein with traverse, and argue for examination of particles comprising all particular hydrophobic proteins. Traverse is made in view of the common way in which the membrane scaffold protein acts to support the hydrophobic protein in a nanoscale particle.

In traversal of the requirement for election of a particular sequence, Applicants note that the sequences are species within the genus of membrane scaffold protein; the unifying features of the membrane scaffold proteins of the present invention are taught at page 6, lines 10-19, and at page 13, line 16 through page 14, line 24.

Applicants respectfully note that the membrane scaffold proteins of the present invention are artificial proteins, i.e., they do not occur in nature. See the definition of membrane scaffold protein in the as-filed Specification, at page 13, line 16, for example. The DNA molecules and host cells are also not natural products. Accordingly, it is urged that the claims to the proteins, DNA and host cells be simultaneously examined. In addition, Applicants have requested the entry of new claim 36, which is linking claim; it is drawn to the method of producing a membrane scaffold protein of the present invention using the DNA molecule which encodes it.

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In view of the related technical features of the membrane scaffold proteins Applicants respectfully request the simultaneous examination of all the species of the membrane scaffold proteins of the present invention, the DNA molecules encoding them, recombinant host cells and methods of producing the membrane scaffold proteins using the DNA molecules/recombinant host cells of the present invention.

Conclusion

In view of the foregoing, it is submitted that this case is in condition for allowance, and passage to issuance is respectfully requested.

If there are any outstanding issues related to patentability, the courtesy of a telephone interview is requested, and the Examiner is invited to call to arrange a mutually convenient time.

The Patent Office is authorized to charge Deposit Account No. 07-1969 in the amount of \$9.00 (small entity) for the fee required under 37 C.F.R. 1.16 for entry of one additional claim over 20. It is believed that no other fees are required. If the amount authorized is incorrect, please deduct the amount due under 37 C.F.R. 1.16-1.17 to Deposit Account No. 07-1969.

Respectfully submitted,



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Response to Requirement for Restriction (10 pgs)

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